What is claimed is:

1. A method of inspecting a defect on a surface of a printed matter comprising:

a step of applying a gray scale erosion filter to a non-defect surface of a printed matter to prepare a gray scale erosion filter applied image and then adding a predetermined density value to said gray scale erosion filter applied image, thereby preparing a reference image;

a step of subtracting a captured image of the surface of the printed matter to be inspected from said reference image, thereby preparing a differential image; and

a step of applying a density compensation process to said differential image to prepare a density compensated image, then applying an edge detection filter to said density compensated image to prepare an edge detection filter applied image and then converting said edge detection filter applied image into binary data according to a predetermined threshold value.

2. The method of inspecting the defect on the surface of the printed matter according to claim 1, wherein said density compensation process is achieved by applying a gray scale dilation filter and a gray scale erosion filter, respectively.

3. The method of inspecting the defect on the surface of the printed matter according to claim 1, wherein said density compensation process is achieved by applying a density conversion process.

4. The method of inspecting the defect on the surface of the printed matter according to claim 1, wherein:

said printed matter is produced by punching or die cutting a substrate, on

which printing has been applied; and

said reference image is prepared on the basis of a captured image of a

non-defect surface of the substrate in a state prior to be punched or die

cut.

5. A method of inspecting a defect on a surface of a printed matter

comprising:

a step of applying a gray scale dilation filter to a captured image of a

non-defect surface of a printed matter to prepare a gray scale dilation

filter applied image and then subtracting a predetermined density value

from said gray scale dilation filter applied image, thereby preparing a

reference image;

a step of subtracting said reference image from a captured image of the

surface of the printed matter to be inspected, thereby preparing a

differential image; and

a step of applying a density compensation process to said differential image to

prepare a density compensated image, then applying an edge detection

filter to said density compensated image to prepare an edge detection

filter applied image and then converting said edge detection filter applied

image into binary data according to a predetermined threshold value.

6. The method of inspecting the defect on the surface of the printed matter

according to claim 5, wherein said density compensation process is achieved by

applying a gray scale dilation filter and a gray scale erosion filter, respectively.

7. The method of inspecting the defect on the surface of the printed matter

according to claim 5, wherein said density compensation process is achieved by applying a density conversion process.

8. The method of inspecting the defect on the surface of the printed matter according to claim 5, wherein:

said printed matter is produced by punching or die cutting a material with printing applied thereon; and

said reference image is prepared on the basis of a captured image of a non-defect surface of the substrate in a state prior to be punched or die cut.

9. An apparatus for inspecting a defect on a surface of a printed matter comprising:

an imaging device for capturing a surface of a printed matter to prepare a captured image; and

an image processing device for applying image processing to said captured image of said surface of said printed matter; wherein said image processing device includes:

a means of applying a gray scale erosion filter to a captured image of a non-defect surface of a printed matter to prepare a gray scale erosion filter applied image;

a means of preparing a reference image by adding a predetermined density value to said gray scale erosion filter applied image;

a means of preparing a differential image by subtracting a captured image of a surface of a printed matter to be inspected from said reference image;

a means of applying a density compensation process to said differential image to prepare a density compensated image;

a means of applying an edge detection filter to said density compensated image to prepare an edge detection filter applied image; and

a means of converting said edge detection filter applied image into binary data according to a predetermined threshold value.

10.   An apparatus for inspecting a defect on a surface of a printed matter comprising:

an imaging device for capturing a surface of a printed matter to prepare a captured image; and

an image processing device for applying image processing to said captured image of said surface of said printed matter; wherein said image processing device includes:

a means of applying a gray scale dilation filter to a captured image of a non-defect surface of a printed matter to prepare a gray scale dilation filter applied image;

a means of preparing a reference image by subtracting a predetermined density value from said gray scale dilation filter applied image;

a means of preparing a differential image by subtracting said reference image from a captured image of a surface of a printed matter to be inspected;

a means of applying a density compensation process to said differential image to prepare a density compensated image;

a means of applying an edge detection filter to said density compensated image to prepare an edge detection filter applied image; and

a means of converting said edge detection filter applied image into binary data according to a predetermined threshold value.